SPECTRUM®

# TSX-1620
# Management Module Guide

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The Complete Networking Solution™

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# Contents


## Preface

What Is in This Guide ..... ix
Conventions ..... x
Related SPECTRUM Documentation ..... x
Other Related Documentation ..... xi
Getting Help ..... xii

## Chapter 1 Introduction

What Is in This Chapter ..... 1-1
TSX-1620 Token Ring Switch ..... 1-1
TSX-1620 Management Module Applications ..... 1-2
SPMA and the TSX-1620 ..... 1-3

## Chapter 2 Device Views

What Is in This Chapter ..... 2-1
Accessing the Logical or Interface Device Views ..... 2-2
Logical Device View ..... 2-3
Interface Device View ..... 2-3
- Logical Interface Icons ..... 2-5
  - Interface Number Label/Device Topology View ..... 2-6
  - Administrative Status Label/IF Status View ..... 2-6
  - Interface Type Label/IF Configuration View ..... 2-6
  - Physical Address Label/IF Address Translation Table ..... 2-7
  - IP Address Label/Network Information Panel ..... 2-7
  - Logical Gauge Label/Performance View ..... 2-7
    - Multi-Attribute Line Graph ..... 2-8
- Interface Options Panel ..... 2-8
  - Gauge Control Panel ..... 2-8
  - Logical Gauge Buttons ..... 2-11

## Chapter 3 Configuration Views

What Is in This Chapter ..... 3-1
Accessing the Device Configuration View ..... 3-1
Device Configuration View ..... 3-2
- Interface Configuration Table ..... 3-3

Interface Configuration View ..... 3-4

## Chapter 4 Event and Alarm Messages

What Is in This Chapter ..... 4-1
TSX-1620 Events and Alarms ..... 4-1

## Chapter 5 Application View

What Is in This Chapter ..... 5-1
TSX-1620 Device-Specific Applications ..... 5-1
Accessing the Application View ..... 5-2
Token Ring If Application ..... 5-5
Token Ring Station Detail View ..... 5-5
Port Pair Application (Dot1dPtPairApp) ..... 5-7
Bridge Port Pair Table ..... 5-7

## Index

# Figures

## Chapter 1 Introduction

Figure 1-1. Applications View ..... 1-3

## Chapter 2 Device Views

Figure 2-1. TSX-1620 Interface Device View ..... 2-4
Figure 2-2. Logical Interface Icon Click Zones ..... 2-5
Figure 2-3. Gauge Control Panel ..... 2-9

## Chapter 5 Application View

Figure 5-1. TSX-1620 Application View (Icon Mode) ..... 5-3
Figure 5-2. TSX-1620 Application View (List Mode) ..... 5-4

# Tables

## Chapter 2 Device Views


Table 2-1. Interface Status Label Definitions ..... 2-6
Table 2-2. Totals Gauge Mode Attribute and Color Definitions ..... 2-10
Table 2-3. Rate Gauge Mode Attributes and Color Definitions ..... 2-10


## Chapter 3 Configuration Views


Table 3-1. TSX-1620 Interface Types ..... 3-3


## Chapter 4 Event and Alarm Messages


Table 4-1. TSX-1620 Events and Alarms ..... 4-1


## Chapter 5 Application View


Table 5-1. Frame Breakdown Pie Chart ..... 5-6
Table 5-2. Isolating Errors Pie Chart ..... 5-6
Table 5-3. Non-Isolating Errors Pie Chart ..... 5-6

# Preface

Use this guide if you are going to manage the TSX-1620 through SPECTRUM. Before reading this guide, you should be familiar with SPECTRUM's operation. You should also be familiar with any network management and hardware requirements described in the related hardware documentation.

## What Is in This Guide

The following chapter descriptions outline the organization of the ***TSX-1620 Management Module Guide***.

| Chapter | Description |
|---|---|
| Chapter 1<br>**Introduction** | Describes the TSX-1620 management modules and model types. |
| Chapter 2<br>**Device Views** | Describes the Logical and Interface Device views and each view's representations of the TSX-1620. |
| Chapter 3<br>**Configuration Views** | Describes the Configuration views for the TSX-1620 and the device-specific management information provided by each view. |
| Chapter 4<br>**Event and Alarm Messages** | Contains a listing and explanation of the alarm and event messages generated in the Event Log or Alarm Manager for the TSX-1620. |
| Chapter 5<br>**Application View** | Describes the Application view for the TSX-1620 and any application information provided by the view. |

# Conventions

This guide uses the following conventions:

- Menu selections and buttons referenced in text are printed in **bold**; for example, **Configuration** or **Detail**.
- Buttons are represented by a shadowed box; for example,

**Help**

- Menu navigation is displayed in order of selection; for example, **Icon Subviews -> Utilities -> Application**.
- Chapter titles appear in *italics*.
- Referenced documents appear in ***bold italics***.

# Related SPECTRUM Documentation

When using this guide, you should have a clear understanding of SPECTRUM functionality and navigation techniques as described in the Administration, Operation, and following documentation:

***SPECTRUM Report Generator User's Guide***

***Getting Started with SPECTRUM 4.0 for Operators***

***Getting Started with SPECTRUM 4.0 for Administators***

***How to Manage Your Network with SPECTRUM***

# Other Related Documentation

Refer to the following documentation for more information on managing TCP/IP-based networks:

Martin, James, Kathleen Kavanagh Chapman, Joe Leben. ***Local Area Networks: Architectures and Implementations***, 2d ed. Englewood Cliffs, NJ: Prentice Hall, 1994.

Rose, Marshall T. ***The Simple Book: An Introduction to Management of TCP/IP-based Internets***. Englewood Cliffs, NJ: Prentice Hall, 1991.

Stallings, William. ***Data and Computer Communications***, 4th ed. New York: Macmillan Publishing Company, 1994.

Tanenbaum, Andrew S. ***Computer Networks***, 3d ed. Englewood Cliffs, NJ: Prentice Hall, 1996

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# Chapter 1

# Introduction

## What Is in This Chapter

This chapter describes the SPECTRUM Management Module for the TSX-1620 Token Ring Switch. It also provides the model type name assigned to the TSX-1620 in SPECTRUM.

## TSX-1620 Token Ring Switch

The TSX-1620 is a standalone Token Ring switch that can be configured to support 8 or 16 Token Ring switch ports. The TSX-1620 provides server centralization while maintaining logical server dedication to a specific ring. Additionally, the TSX-1620 offers a redundant load-sharing power supply, and full wire speed performance with the capabilities and versatility of either a workgroup or backbone switch.

The TSX-1620 Management Module includes a software emulation of the actual device attributes and functionality. The ***TSX-1620 Management Module Guide*** provides all the information necessary to manage the TSX-1620 using SPECTRUM.

The TSX-1620 Management Module supports one model type, TSX1620, used to represent the physical TSX-1620, the supported applications, and the interfaces. The following chapters provide a description of the model and its relationship to the views in SPECTRUM.

# TSX-1620 Management Module Applications

SPECTRUM management of the TSX-1620 is based on common and device-specific applications. The following common applications and sub-applications are discussed in the ***MIB II Applications, Bridging Applications, and Miscellaneous Applications*** references.

- Bridging
  - Gen Bridge (Gen_Bridge_App)
  - Source Routing (rfc1525App)
  - Spanning Tree (Span_Tree_App)
  - Static (Static_App)
  - Transparent (Transparnt_App)
- MIB-II (SNMP2_Agent)
  - System (System2_App)
  - ICMP (ICMP_App)
  - IP (IP2_App)
  - UDP (UDP2_App)

Device-specific applications and sub-applications are described in Chapter 5, *Application View*, and are listed below.

- Token Ring (TokenRingApp)
  - Token Ring If (TRIfApp_0#)
- Port Pair App (Dot1dPtPairApp)

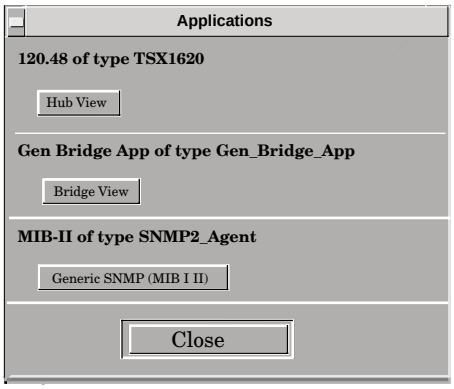
# SPMA and the TSX-1620

SPECTRUM also supports SPECTRUM Portable Management Application (SPMA) functionality for the TSX-1620. To open the SPMA Application view from any SPECTRUM view, do the following:

1. Highlight the Device icon.
2. From the View menu, select **Icon Subviews -> Utilities -> Applications**.

The Application view provides buttons to select SPMA-specific views and dialog boxes. Figure 1-1 shows an example of an SPMA Applications view.

**Figure 1-1. Applications View**




For details on the following SPMA views, refer to the ***SPECTRUM Portable Management Application for the TSX-1620 User's Guide***.

## Bridge View

Chapter 3, *Using the TSX-1620 Bridge View*, provides detailed instructions for configuring and managing the bridging capabilities available for many client modules. Bridge capabilities include monitoring Bridge operation, using the special and filtering databases, and setting forwarding thresholds and notification options.

For details on the following SPMA views refer to the ***SPECTRUM Portable Management Application Tools Guide***.

**Generic SNMP (MIB I II)**

Chapter 2, *Using the MIB I, MIB II Tool*, explains how to use this tool to view and change MIB I and MIB II object ID values.

# Chapter 2

# Device Views

## What Is in This Chapter

This chapter describes the Device views available for the TSX-1620 Management Module and includes representations of the modules, ports, and interfaces. It also describes any subviews available. The Device views accessible from the Icon Subviews menu are as follows:

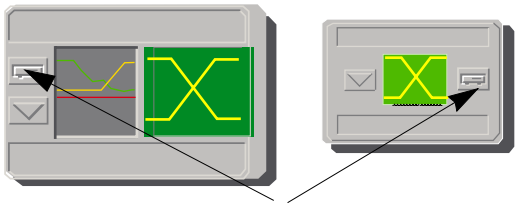
- Logical Device view
- Interface Device view

The Logical Device view allows you to access the TSX-1620 SPECTRUM Portable Management applications and the logical representations of the TSX-1620 interfaces. The Interface Device view allows you to access the views that monitor and control the interfaces. The sections on the following pages provide information on accessing the TSX-1620 Device views.

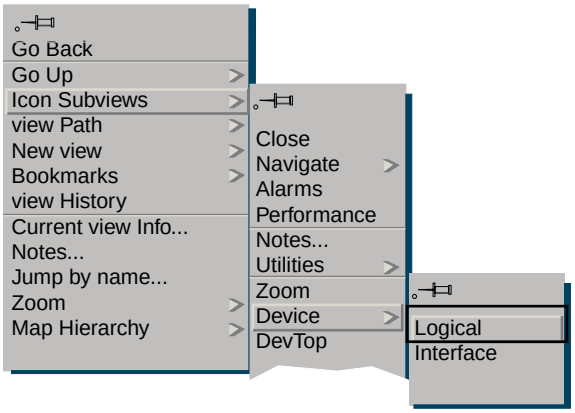
# Accessing the Logical or Interface Device Views

The Device view is accessed using one of the following methods:

- Double-click on the Device view button of the TSX-1620 module icon. This opens the Device view that was opened last (i.e. Logical or Interface).




- Highlight the TSX-1620 device icon and select **Device -> Logical** or **Interface** from the Icon Subviews menu.



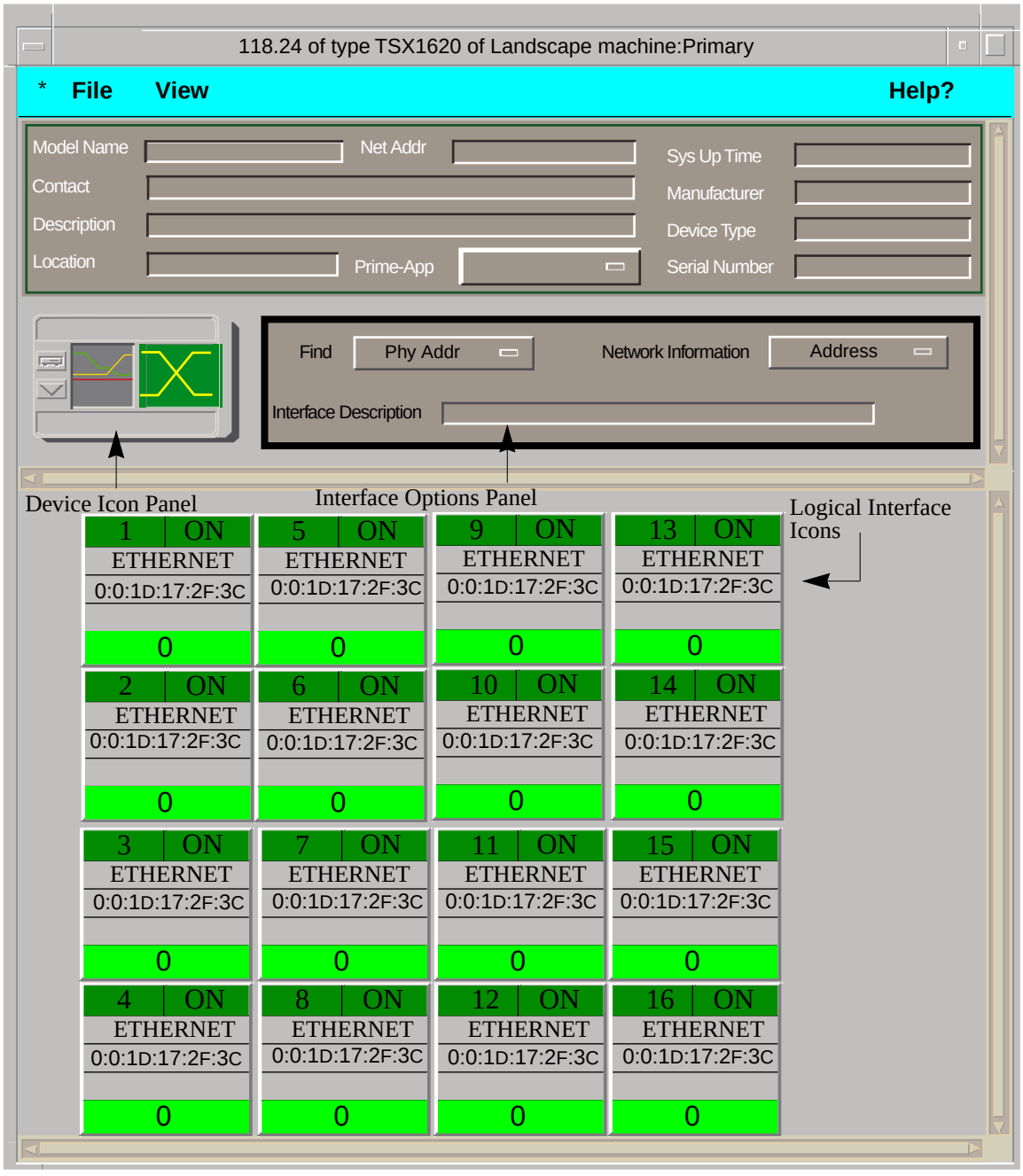
# Logical Device View

The Logical Device view for the TSX-1620 in SPECTRUM is a SPECTRUM Portable Management Application (SPMA) view. Refer to the ***SPECTRUM Portable Management Application for the TSX-1620 User's Guide*** for details on using the Device view to manage your TSX-1620.

# Interface Device View

Access the Interface Device view using one of the methods described previously in this chapter. Figure 2-1 provides an example of a TSX-1620 Interface Device view. The Interface Device view provides dynamic configuration and performance information for the TSX-1620. If the configuration changes, SPECTRUM modifies the Device view after the next polling cycle to reflect the new configuration

**Figure 2-1. TSX-1620 Interface Device View**

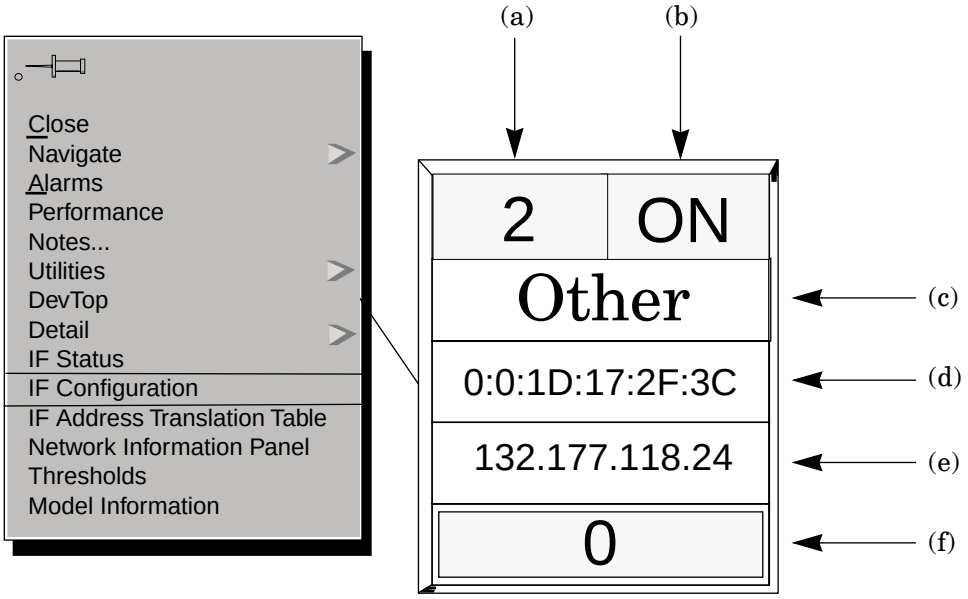


# Logical Interface Icons

The TSX-1620 Interface Device view displays a logical representation of the device's interfaces. A Logical Interface Icon represents each port on the TSX-1620 device. Additional views for the interface can be accessed by single-clicking on the interface icon to highlight it and then selecting the **Icon Subviews** option from the View menu, or by double-clicking each icon zone. The Port Notes facility is also accessed from the **Icon Subviews** menu.

The Logical Interface Icon consists of six zones, providing configuration and performance information. Figure 2-2 provides a detailed illustration of the Logical Interface Icon and the following sections provide further information about each icon zone.

**Figure 2-2. Logical Interface Icon Click Zones**




a. Interface Number Label/Device Topology View

b. Administrative Status Label/IF Status View

c. Interface Type Label/IF Configuration View

d. Physical Address Label/IF Address Translation Table

e. IP Address Label/Network Information Panel

f. Logical Gauge Label/Interface Performance View

## Interface Number Label/Device Topology View

This label displays the interface number identifying this interface. Double-clicking on this label accesses the TSX-1620 Device Topology (DevTop) view.

## Administrative Status Label/IF Status View

Provides access to configuration views specific to the port. Double-clicking on this label of the Interface icon accesses the TSX-1620 Interface Status view. Table 2-1 shows the possible interface statuses and their respective colors.

**Table 2-1. Interface Status Label Definitions**

| Operational Status | Administrative Status | Text Display | Color |
|---|---|---|---|
| ON | ON | ON | Green |
| OFF | OFF | OFF | Blue |
| OFF | ON | OFF | Yellow |
| Testing | Testing | Test | Red |

**Operational Status**
A read-only indicator button displaying the current operational state of the interface (ON, OFF, or Testing).

**Administrative Status**
The desired operational state of the interface (Default, ON, OFF, or Testing). You may change the value for Administrative Status.

## Interface Type Label/IF Configuration View

This label displays the type of TSX-1620 interface. Double-clicking on the IF Configuration view label accesses the Interface Configuration view, which provides the following information:

**Operation Status**
This read-only field provides the current operational state of the interface (On, Off, or Testing).

**Admin Status**
You can select the desired operational state of the interface (On, Off, or Testing).

**Last Change**
The System UpTime value when the interface entered its current operational state. This is provided in the format: D + HH:MM:SS, for example, 1+20:40:25 if the TSX-1620 has been active for one day and 20 hours, 40 minutes and 25 seconds.

**Network Name/Address**
The IP Address assigned to the TSX-1620.

**Physical Address**
The Ethernet (MAC) address of the interface.

**Bandwidth**
The estimated bandwidth of the interface measured in bits per second. For interfaces that do not vary in bandwidth, or when no accurate estimate can be made, a nominal bandwidth is provided.

**Packet Size**
The largest packet that can be transmitted or received by the port, measured in octets.

**Queue Length**
The length of the outbound packet queue, in packets.

## Physical Address Label/IF Address Translation Table

This label displays the physical address of the device interface. Double-clicking on this label accesses the Interface Address Translation Table. This table cross-references device IP addresses to device MAC (Ethernet) addresses for selected nodes between networks. Double-clicking on any column entry opens an address-specific Address Translation Table Information view.

## IP Address Label/Network Information Panel

This label displays the IP Address address of the device. Double-clicking on this label accesses the Network Information Panel. This panel provides Name, Network Address, and subnet mask information for the interface for the TSX-1620.

### Logical Gauge Label/Performance View

This label on the Logical Interface Icon (see Figure 2-2) accesses the Performance view for the interface. The Performance view is a multi-line graph and provides routing information (traffic flow) in packets, as described below. This area is also a Logical Gauge which is described later in this chapter.

### Multi-Attribute Line Graph

The Multi-Attribute Line Graph provides a general indication of routing activity. The attributes displayed are pre-selected and use colors to represent different statistics.

## Interface Options Panel

The Interface Options Panel, displayed in the Interface Device view (Figure 2-1), is located directly below the Device view banner and displays the TSX-1620 Location/Topology view icon. The Interface Options Panel allows a user to modify the presentation of the Logical Interface Icon (described previously), and is described below.

**Filter**
The Filter area of the Interface Options Panel is only implemented if the SPECTRUM Routing Services Management Module is loaded. For more information, refer to the ***SPECTRUM Management Module Guide for Routing Services***.

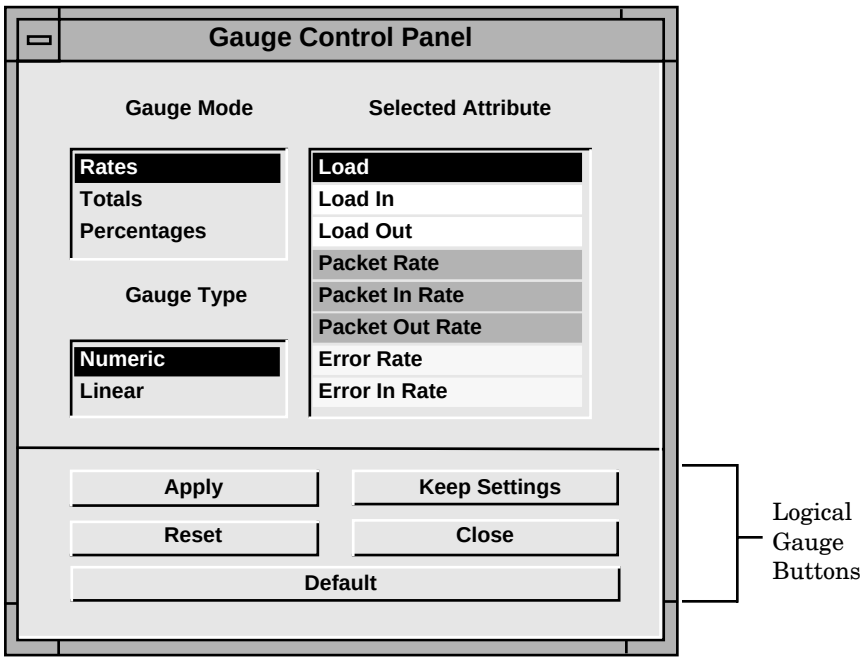
**Network Information**
The Network Information area of the Interface Options Panel allows you to select what interface information is displayed in the Network Information Label of that interface's Logical Interface Icon. Possible selections are ADDRESS, NAME, or MASK.

**Interface Description**
The Interface Description area of the Interface Options Panel displays a description of the selected interface. If no interface is selected, this field is empty.

### Gauge Control Panel

The Gauge Control Panel (Figure 2-3) allows you to change the type of statistical information presented in the Logical Gauge area of the Logical Interface icon.

**Figure 2-3. Gauge Control Panel**




To access the Gauge Control Panel, double-click on the Interface Options Panel, or single-click on the panel to highlight it and then select **Gauge Control Panel** from the Icon Subviews menu. The Gauge Control Panel provides the following information:

- Selected Attribute
- Gauge Mode
- Gauge Type
- Logical Gauge Buttons

**Selected Attribute**
This area of the Gauge Control Panel allows you to select the statistical attribute displayed on the Logical Interface icon's gauge. The label changes color to reflect the attribute selected.

**Gauge Mode**
This area of the Gauge Control Panel allows you to select the mode presented by the Logical Gauge. Possible selections are Totals, Rates, or Percentages. The Percentages selection presents the percentage of the interface compared to the rest of the interfaces. Table 2-2 provides a list of attributes and color definitions for the Totals mode. Table 2-3 provides a list of attributes and color definitions for the Rates mode.

**Table 2-2. Totals Gauge Mode Attribute and Color Definitions**

| Selected Attribute | Color |
|---|---|
| In Errors | Orange |
| Out Errors | Orange |
| In Packets | Blue |
| Out Packets | Blue |
| Unknown Protocols | Tan |
| In No Resource | Yellow |
| Out No Resource | Yellow |
| In Octets | Gray |
| Out Octets | Gray |

**Table 2-3. Rate Gauge Mode Attributes and Color Definitions**

| Selected Attribute | Color |
|---|---|
| Load | Green |
| Load In | Green |
| Load Out | Green |
| Packet Rate | Blue |
| Packet In Rate | Blue |
| Packet Out Rate | Blue |
| Error Rate | Orange |
| Error In Rate | Orange |
| Error Out Rate | Orange |
| Discard Rate | Yellow |
| Discard In Rate | Yellow |
| Discard Out Rate | Yellow |

**Gauge Type**
The Gauge Type option allows you to select either a numeric or linear presentation of the Logical Gauge.

## Logical Gauge Buttons

The following section describes the Logical Gauge buttons.

**Apply**

Applies the current settings to the Logical Gauge. It does not save the settings.

**Keep Settings**

Saves the current gauge settings while running SpectroGRAPH.

**Reset**

Resets the settings to the last saved values.

**Close**

Closes the Gauge Control Panel.

**Default**

Resets the settings to the SPECTRUM default.

# Chapter 3

# Configuration Views

## What Is in This Chapter

This chapter provides a description of the Configuration views for the TSX-1620. These views allow you to access device and interface specific configuration information, as well as traffic flow and error rates. The following configuration views are available for the TSX-1620 management module.

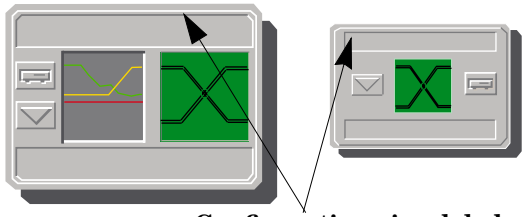
- Device Configuration
- Interface Configuration

The Interface Configuration view is a sub-view of the Device Configuration view.

## Accessing the Device Configuration View

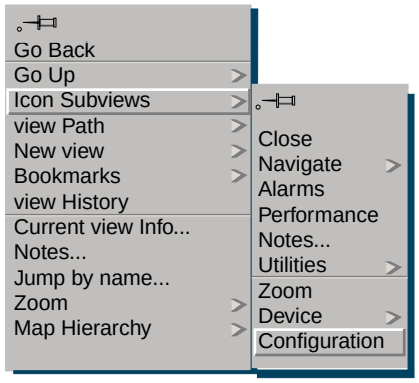
Access the Device Configuration view using one of the following methods:

- Double-click on the Configuration view label of the TSX-1620 device icon.



**Configuration view label**

- Highlight the device icon and select **Configuration** from the Icon Subviews menu.




# Device Configuration View

The Device Configuration view for the TSX-1620 provides detailed information on the TSX-1620's network, host, port, and model configuration. This view provides the following device configuration-specific information:

**Device Name**
The user-defined device name. This field is updateable.

**Contact Status**
The status of the TSX-1620. Possible values are Established, Lost, or Initial.

**Number of Interfaces**
The number of ports on the TSX-1620.

**IF Address Translation**

Allows you to the access Interface Address Translation Table; the fields are described below. This table can be updated.

**Interface Index**
A unique value for each interface. Its value ranges between 1 and the value of the ifnumber. The value 0 for each interface must remain constant at least from one reinitialization of the entity's network management system to the next reinitialization.

**Physical Address**
The interface's address at the protocol layer immediately below IP in the protocol stack. The Ethernet address of the bridge is returned, for both channels of the bridge.

**Network Address**
The network address for the interface.

**Reconfigure**

This button allows you to reconfigure the device. When the reconfiguration is complete, the “Action Successful” dialog box appears.

## Interface Configuration Table

The Interface Configuration Table provides port configuration information for each of the TSX-1620’s ports. The Interface Configuration Table and its corresponding entry-specific views provide the following information:

**Index**
The port number on the TSX-1620.

**Description**
A textual description of the interface. This description may include the name of the manufacturer, the product name, and the version number of the hardware interface.

**Type**
The type of interface for the port. Possible interface types and a brief description of each type are listed in Table 3-1.

**Table 3-1. TSX-1620 Interface Types**

| Interface Type | Description |
|---|---|
| ISO88025 | ISO token ring |
| FDDI | Fiber Distributed Data Interface (optional) |

**Bandwidth**
The estimated bandwidth of the interface measured in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, a nominal bandwidth is provided.

**Physical Address**
The Ethernet (MAC) address of the port.

**Operation Status**
The current operational state of the port (On, Off, or Testing).

**Admin Status**
The desired operational state of the port (On, Off, or Testing).

**Last Change**
The System UpTime value when the port entered its current operational state.

**Queue Length**
The length of the outbound queue of packets.

**Packet Size**
The largest Maximum Transmission Unit (MTU) that can be transmitted or received by the port, measured in octets.

Double-clicking on any column entry for a particular port accesses the Interface Configuration view. This view is described below.

# Interface Configuration View

Access the IF Configuration view by highlighting an Interface icon in the Interface Device view, and selecting **IF Configuration** from the Icon Subviews menu. The IF Configuration view provides the following information:

**Admin Status**
The desired operational state of the port (On, Off, or Testing). You can change the Admin Status in this view.

**Network Name/Address**
Displays the network name and IP address for this TSX-1620.

# Chapter 4

# Event and Alarm Messages

## What Is in This Chapter

This chapter describes the types of events and alarms generated by the TSX-1620.

## TSX-1620 Events and Alarms

Table 4-1 describes the event messages appearing in the Event Log, and any corresponding probable cause messages that may be displayed in the Enterprise Alarm Manager view for the TSX-1620.

**Table 4-1. TSX-1620 Events and Alarms**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event00010306**<br><br>{d "%w- %d %m-, %Y - %T"} -<br>A(n) {t} device, named {m}, has been cold started. (event [{e}]) | **No probable cause message.** |
| **CsEvFormat/Event00010307**<br><br>{d "%w- %d %m-, %Y - %T"} -<br>A(n) {t} device, named {m}, has been warm started. (event [{e}]) | **No probable cause message.** |

**Table 4-1. TSX-1620 Events and Alarms (Continued)**

| Message in the Event Log | Alarm View Probable Cause Message |
|---|---|
| **CsEvFormat/Event00010308**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Down. (event [{e}]) | **CsPCause/Prob00010308**<br><br>Communication link is down. |
| **CsEvFormat/Event00010309**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected a communication Link Up. (event [{e}]) | **No probable cause message.** |
| **CsEvFormat/Event0001030a**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an Authentication Failure. (event [{e}]) | **CsPCause/Prob0001030a**<br><br>Authorization failure. Other user is trying to connect to device with an invalid community string. |
| **CsEvFormat/Event0001030b**<br><br>{d "%w- %d %m-, %Y - %T"} - A(n) {t} device, named {m}, has detected an EGP Neighbor Loss. EGP Neighbor IP address is {0 1}. (event [{e}]) | **CsPCause/Prob0001030b**<br><br>Lost contact with EGP neighbor. |
| **CsEvFormat/Event00010402**<br><br>{d "%w- %d %m-, %Y - %T"} - Device {m} of type {t} is created with a physical (MAC) address already used by another model. (event [{e}]) | **CsPCause/Prob00010402**<br><br>DUPLICATE PHYSICAL ADDRESS<br><br>The model has the same Physical address (MAC address) as that of some other model. |

# Chapter 5

# Application View

## What Is in This Chapter

This chapter describes the TSX-1620 Management Module Application view. The Application view allows the user to view information for the applications supported by the TSX-1620. Each application appears as an icon in the Application view; each icon provides access to sub-views with detailed network information.

## TSX-1620 Device-Specific Applications

SPECTRUM management of the TSX-1620 is based on common and device-specific applications and sub-applications. The common applications are described in the ***MIB II Applications, Bridging Applications, and Miscellaneous Applications references***. and are listed below.

- Bridging--Gen Bridge App (Gen_Bridge_App)
  - Source Routing (rfc1525App)
  - Spanning Tree (Span_Tree_App)
  - Static (Static_App)
  - Transparent (Transparent_App)
- MIB-II (SNMP2_Agent)
  - System (System2_App)
  - ICMP (ICMP_App)
  - IP (IP2_App)
  - UDP (UDP2_App)

The TSX-1620 supports the following device-specific applications, which are described in this chapter:

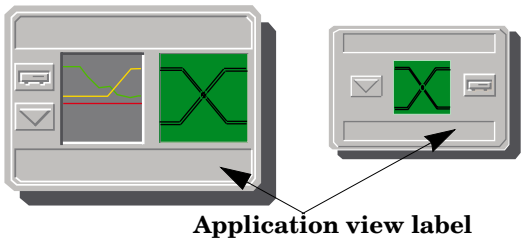
- Token Ring (TokenRingApp)
  - Token Ring If (TRIfApp_0#)
- Port Pair App (Dot1dPtPairApp)

Figure 5-1 provides an example of a partial TSX-1620 Application view.

# Accessing the Application View

Access the Application view using one of the following methods:

- Double-click on the Application view label of the device icon.




- Highlight the device icon and select **Application** from the Icon Subviews menu.

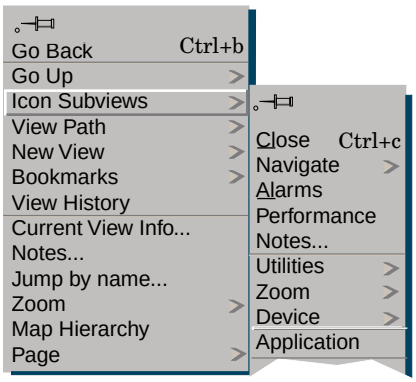


**Figure 5-1. TSX-1620 Application View (Icon Mode)**

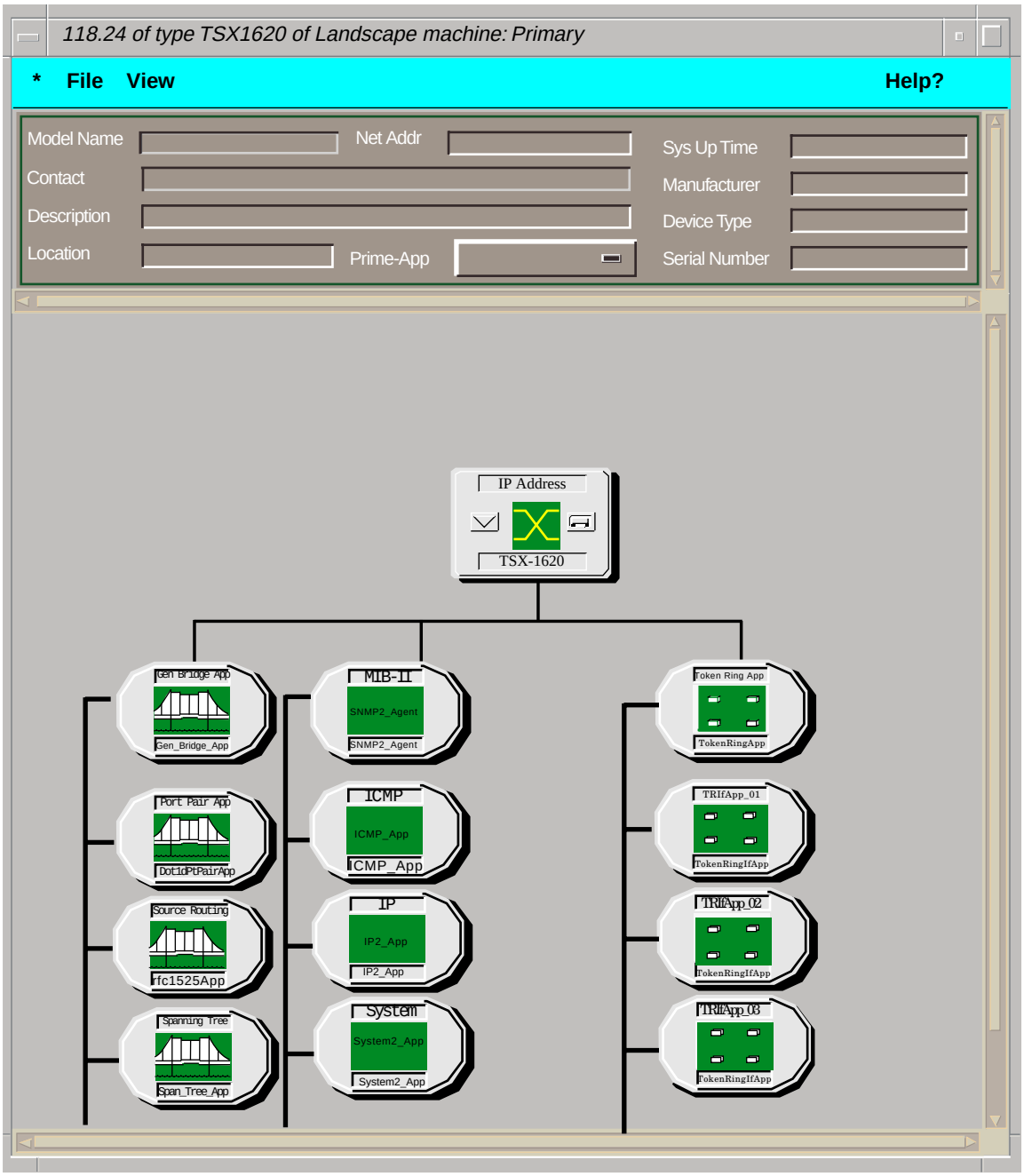
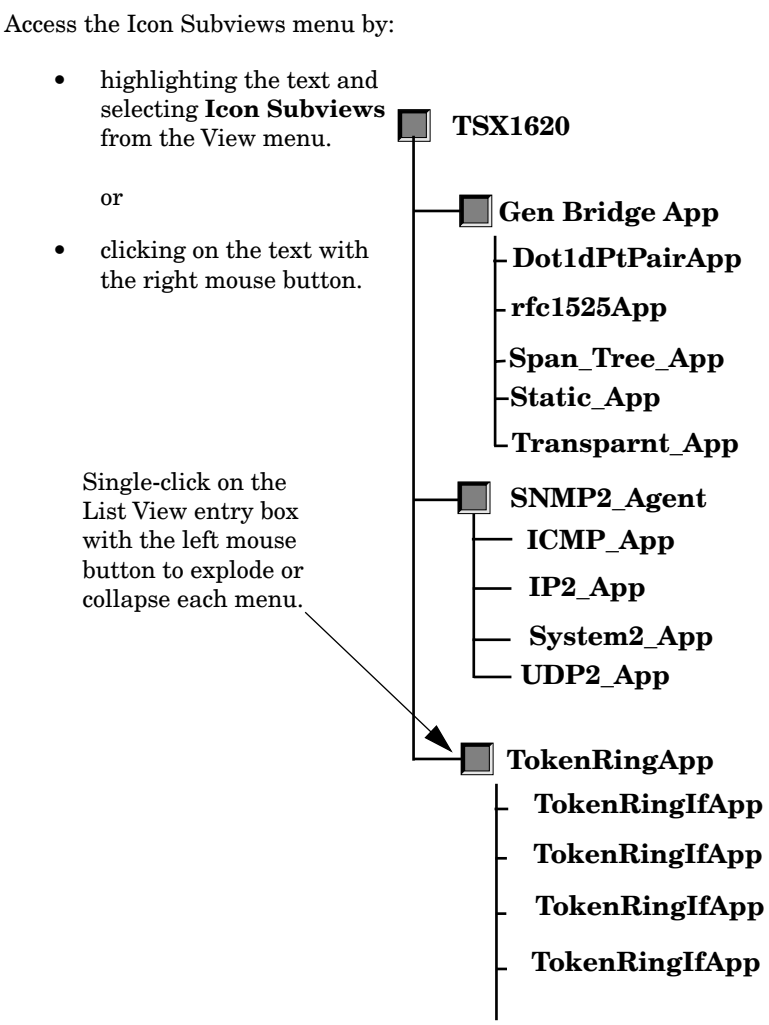


**Figure 5-2. TSX-1620 Application View (List Mode)**



# Token Ring If Application

The following views provide Token Ring statistics for the Token Ring If application.

## Token Ring Station Detail View

Access this view through the Station Detail button in the Token Ring Station Table view. The Token Ring Station Detail view provides detailed information on the selected station. This view includes three color-coded pie charts presenting a breakdown of token ring application statistics. Each statistic is presented as a total amount since the module was initialized and as a percentage of overall traffic. Table 5-1, Table 5-2, and Table 5-3 provide information on the statistics displayed by the pie charts. This view also provides informational fields, which are described below.

**Station Address**
Displays the MAC (physical) address of the station.

**Configure Station Alarms**
Opens the Token Ring Station Alarms Configuration view, which allows you to change the threshold value and state of the station for the Line, Burst, A/C, Internal, and Receive Congestion errors.

**Transmitted Beacon Count**
The number of times this interface has transmitted a beacon frame.

**Remove Ring Station Count**
The number of times the interface has received a Remove Ring Station MAC frame request. When this frame is received the interface will enter the close state and dot5RingState will signify this condition.

**Single Station Count**
The number of times the interface has sensed that it is the only station on the ring. This will happen if the interface is the first one up on a ring, or if there is a hardware problem.

**Soft Error Count**
The number of Soft Errors the interface has detected. It directly corresponds to the number of Report Error MAC frames this interface has transmitted. Soft Errors are those which are recoverable by the MAC layer protocols.

**Hard Error Count**
The number of times this interface has detected an immediately recoverable fatal error. It denotes the number of times this interface is either transmitting or receiving beacon MAC frames.

**Table 5-1. Frame Breakdown Pie Chart**

| Statistic | Definition |
|---|---|
| Abort Trans | The total number of abort sequences transmitted on this ring. This counter is incremented when a station transmits an abort delimiter while transmitting. |
| Internal | The total number of internal errors detected by a station on this ring. This counter is incremented when a station transmits an abort delimiter while transmitting. |
| Signal Loss | The number of times this interface has detected the loss of signal condition from the ring. |
| Lobe Wire | The number of times the interface has detected an open or short circuit in the lobe data path. The adapter will be closed and dot5RingState will signify this condition. |
| Frequency | The total number of frequency errors on this ring. |

**Table 5-2. Isolating Errors Pie Chart**

| Statistic | Definition |
|---|---|
| Line | Incremented when a frame or token is copied by a station, the E bit is zero in the frame or token, and a non-data bit (J or K bit) between the SD and the ED of the frame or token, or there is an FCS error in the frame. It represents the total number of line errors that have occurred on this ring. |
| Burst | This counter is incremented when a station detects the absence of transitions for five half-bit timers (burst-five error). Burst represents the total number of burst errors that have occurred on this ring. |
| A/C | The total number of address/copied errors that have occurred on this ring. This counter is incremented when a station receives an AMP or SMP frame and denotes a station that cannot set the AC bits properly. |

**Table 5-3. Non-Isolating Errors Pie Chart**

| Statistic | Definition |
|---|---|
| Lost Frames | The total number of times a Token Ring Rotation (TRR) station timer expired while trying to transmit. |
| Congestions | The total number of times a station recognizes a frame addressed to it, but the station has no available buffer space. |
| Frame Copied | The total number of times a station recognizes a frame addressed to it, and detects that the FS field A bits are set to 1. |

**Table 5-3. Non-Isolating Errors Pie Chart (Continued)**

| Statistic | Definition |
|---|---|
| Recoveries | This counter is incremented when a station recognizes a frame addressed to its specific address, but has no available buffer space indicating that the station is congested. |
| Token | The total number of times the station acting as active monitor recognizes an error condition requiring a token be transmitted. |

# Port Pair Application (Dot1dPtPairApp)

The following information is available for the Port Pair Application.

## Bridge Port Pair Table

Access this table from the Port Pair App icon in the Application view. Select **Bridge Port Pair Table** from the Icon Subviews menu. The resulting table view, Dot1d Bridge Port Pair Information table, provides the following information:

**Total Ports**
The total number of ports available for the device.

**MAC Address**
The physical address of the interface.

**Bridge Type**
The bridge type for this interface is Source Route Transparent (SRT).

**Low Port**
The port number of the lower numbered port for which this entry contains port pair database information.

**High Port**
The port number of the higher numbered port for which this entry contains port pair database information.

**Bridge Number**
The bridge number that uniquely identifies the path provided by this source routing bridge between the segments connected to dot1dPortLowPort and dot1dPortPairHighPort. The purpose of bridge number is to disambiguate between multiple paths connecting the same two LANs.

**Bridge Status**
The status of the bridge; Enabled or Disabled.

# Index


## A

A/C 5-5, 5-6
Abort
    Sequence 5-6
Accessing
    Application View 5-2
Action Successful 3-3
Address
    MAC 2-5
    Network 2-8
Admin Status 3-3, 3-4
Administrative Status Label 2-6
Alarm
    Messages 4-1
Application View 5-1
    Description 5-3
Application View Reference Guide 5-1
Application Views 5-1
Apply Button 2-11
Attribute
    Selected 2-9

## B

Bandwidth 3-3
Blue 2-10
Bridge Number 5-7
Bridge Status 5-7
Bridge Type 5-7
Bridging 5-1
Burst 5-5, 5-6
Button
    Apply 2-11
    Close 2-11
    Default 2-11
    Keep Settings 2-11
    Reset 2-11

## C

Changing Application View Mode 5-3
common applications 5-1
Configure Station Alarms Button 5-5
Congestions 5-6
Conventions xii

## D

Default 2-11
Description 3-3
Device Configuration View
    Contact Status 3-2
    Number of Interfaces 3-2
Device Configuration view 3-1
Device Icon Panel 2-8
Device Name 3-2
Device Topology View 2-6
Device Topology View Label 2-6
Device view banner 2-8
Device Views
    Chassis 2-1
    Interface 2-1
device-specific applications 5-1
Discard In Rate 2-10
Discard Out Rate 2-10
Discard Rate 2-10

## E

Error In Rate 2-10
Error Out Rate 2-10
Error Rate 2-10
error rate 3-1
estimated bandwidth 2-7
Event
    Messages 4-1

## F

FDDI
    Switch
        Events and Alarms 4-1
Filter 2-8

Frame
Copied 5-6
Frequency 5-6

## G

Gauge
Control Panel 2-8
Logical 2-5, 2-8
Mode 2-9
Type 2-10
Getting Help xii
Gray 2-10
Green 2-10

## H

Help xiv
High Port 5-7

## I

ICMP_App 1-2, 5-1
icon access 5-1
IF Address Translation Table Label/Physical Address 2-7
IF Configuration View 2-6
IF Status View 2-6
IF Status View Label 2-6
Administrative Status 2-6
Operational Status 2-6
ifnumber 3-2
In Errors 2-10
In No Resource 2-10
In Octets 2-10
In Packets 2-10
Index 3-3
Interface
Description 2-8
Number 2-5
Percentages 2-9
Interface Adddress Translation Table 3-2
Interface Configuration View
Admin Status 2-6
Bandwidth 2-7
Last Change 2-7
Network Name/Address 2-7
Operation Status 2-6
Packet Size 2-7
Physical Address 2-7
Queue Length 2-7
Interface Configuration view 3-4
Interface Device View 2-1
Interface Index 3-2
Interface Number Label 2-6
Interface Type Label 2-6
Internal 5-5, 5-6
IP
IP2_App 5-1

## L

Last
Change 3-4
Line 5-5, 5-6
Load 2-10
In 2-10
Out 2-10
Logical Gauge 2-7
Logical Interface Icon 2-5
Logical LAN Interface Icons 2-5
Lost Frames 5-6
Low Port 5-7

## M

MAC
Address
Label 2-5
MAC Address 5-7
Mask
Network 2-8
Maximum Transmission Unit 3-4
MIB-II 1-2, 5-1
Mode
Gauge 2-9
model configuration 3-2
MTU 3-4
Multi-Attribute Line Graph 2-8

## N

Name
Network 2-8
Network
Information 2-5, 2-8
Network Address 3-3
Network Information Panel Label 2-7

Network Name 3-4
Notice i

## O

Operation Status 3-3
Orange 2-10
Out Errors 2-10
Out No Resource 2-10
Out Octets 2-10
Out Packets 2-10
outbound packet queue 2-7

## P

Packet In Rate 2-10
Packet Out Rate 2-10
Packet Rate 2-10
Packet Size 3-4
Performance View 2-7
Performance View Label 2-7
Physical Address 3-2, 3-3
Port Pair App
    Dot1dPtPairApp 1-2, 5-2
Port Type Label 2-5
protocol stack 3-2
Protocols
    Unknown 2-10

## Q

Queue Length 3-4

## R

Rates 2-9
Receive Congestion 5-5
reconfigure the device 3-3
Related Reading xii, xiii
Restricted Rights Notice iv
rfc1525App 5-1

## S

Selected 2-9
SNMP2_Agent 1-2, 5-1
Span_Tree_App 5-1
SPECTRUM
    Portable Management Application 1-3
SPMA
    Application View 1-3
    Front Panel Redundancy 1-3
    Generic SNMP (MIB I II) 1-4
Static_App 5-1
Station
    Address 5-5
    Name 5-5
Status
    Administrative 2-5
System UpTime value 2-7
System2_App 1-2, 5-1

## T

Tan 2-10
TCP/IP Based Networks xii
Terminology xi
Token 5-6
    Ring
        Station
            Detail View 5-5
Token Ring
    TokenRingApp 1-2, 5-2
Token Ring If
    TRIfApp 1-2, 5-2
Total Ports 5-7
Totals 2-9
Trademarks i
traffic flow 3-1
Transparent_App 5-1
Type 3-3

## U

UDP
    Application 1-2, 5-1
UDP2_App 1-2, 5-1

## V

Virus Disclaimer i

## Y

Yellow 2-10